[Mr. N. Ramakrishna Pillai.]

PRESIDENT: The term of the present Economic Development Board expires by the end of 1098, and a new Economic Development Board has to be appointed from 1099 onwards. It has been decided, in consultation with the Standing Finance Committee, to fix the strength of the new Economic Development Board at twelve, of whom five will be officials and the rest non-officials. Of the non-officials, four will be elected by the non-official members of the Legislative Council. I therefore request the non-official members to kindly meet as soon as to-day's work is finished and elect four from among themselves or from outside. The choice need not be restricted to the members of the House.

I also request the non-official members of the House to elect three members from among themselves for the Standing Finance Committee of the Legislative Council for the year 1099. Both the elections will be held under the presidency of the Deputy President.

DEMAND FOR GRANTS.—(*Contd.*)

DEMAND XIV—INDUSTRIES.

MR. I. C. CHACKO (*Director of Industries*): Sir, I beg to move for a grant not exceeding Rs. 1·35 lakhs, under Demand XIV—Industries.

Motion 336.

MR. K. P. RAMAN PILLAI (*Quilon*): Sir, I beg to make the following motion:—

336. To omit the allotment of Rs. 1,300 for Geological establishment.

There was a time when we had two State Geologists. Later on, it was found that one of them was sufficient for the purpose of the State. Now it has been found that a State Geologist is not necessary at all. Under these circumstances, I fail to see why there should be an Assistant Geologist with a big establishment under him.

MR. N. RAMAKRISHNA PILLAI (*Vaikam* cum *Ettumanur*): I support the motion. Sir, we find, from the Administration Report of 1097, that the Geological Department was reorganised with effect from the 1st Chingam, 1097, and the staff strengthened by the appointment of an Assistant Geologist, a Chemical Assistant and a prospector. The present Director of Industries was the State Geologist before he was appointed to be in charge of the Department of Industries without prejudice to his own duties in April, 1921, when Dr. Barker proceeded to England. I take this opportunity of requesting Mr. Chacko to give us some idea of the geological discoveries made before and after this section of the present Industrial Department has been strengthened by the appointment of the Assistant in 1097. For, it would indeed remove a good deal of misapprehension as regards the nature of the work and the results achieved hitherto by the Geological Department. The information would also enable us to form an opinion as to whether the

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retention and continuance of the new establishment created in 1097 would be really useful or not.

My own information about the results achieved by the geological section of this department is that it has not till now justified its existence by making any discoveries or even by adding to our knowledge of the geological resources. I understand that no mineral of any value to the State has been discovered so far, and that no prospect of any successful discovery is in sight, though our impression has all along been, and still is, that Travancore is rich in mineral resources. Monazite was discovered by a German, though its discovery was not a matter of difficulty and though this State shares a monopoly of this mineral only with one other country in the world, *viz.*, Brazil. In spite of this fact, the State had to lose a good deal on account of the small royalty levied at first, because Government had then no proper advice and information as to its rarity and value. Plumbago and mica were known to exist in the country even before the Geological Department came into existence and the credit of working up these minerals belongs to foreign enterprise. I shall be glad to know of a single instance of a discovery which has benefited the State through all the time this department has been in existence.

Now, looking at the work done by the staff, the account given in the Administration Report of 1097 is not at all satisfactory or hopeful. Prospecting for pyrrhotite, 'inspecting' lignite seams at Varkalai and collecting a few rock slices are the work for which an expenditure of Rs. 12,097 had to be incurred in 1097. The report of 1097 also shows that, in 1096, the department was engaged in prospecting for graphite and mica, that prospecting for mica was found unnecessary as the Madras Mica Company was already in the field, and that prospecting for graphite had to be postponed pending the introduction of a bill authorising entry into private lands. Apparently, attempts in this direction were fruitless and were accordingly given up in 1097, and the result of the operations of the department is thus summarised in one sentence in the report of 1097 :—

"Consequently the department devoted its attention to prospecting for pyrrhotite alone during the year."

It seems to me tolerably certain that the present attempt to extract iron from laterite stones will not be of any practical use to the State. The attempt may have its value as a scientific experiment and may even afford some occupation to the staff for some time. But investigation should proceed from a utilitarian point of view and not for the satisfaction of a curiosity. Laterite is so widely scattered in area and the amount of iron that could be extracted is comparatively so small that it is not difficult to foresee that any attempt to start an industry and compete with foreign iron is certainly bound to fail. The absence of coal is another impediment in the way of any successful enterprise in this direction. In spite of the fact that iron ore in large quantities is found in Salem, even the Government of India find it impossible to work up the mines on account of the difficulty of bringing down coal from North

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[Mr. I. C. Chacko.]

India. We have here neither the ore in such large quantities nor the coal with which alone an industry of the kind could be started; and yet this prospecting, without a thought as to its commercial value, is the work on which the staff is said to be engaged.

In this connection, I may be permitted to point out that the department has been very slow to take advantage of information leading to useful investigation and discovery. I would like to know for instance, whether the possibility of kerosine oil being found near Alleppey which was discussed in the *Madras Mail* in its last two *Engineering Supplements* has been brought to the notice of the Director and whether advantage has been taken of this discussion to make any investigation in this direction. Prospecting for kerosine oil, it need hardly be said, is certainly more desirable than prospecting for iron from laterite stones.

There are also very serious defects in the method of work adopted in this department. I understand that the Assistant Geologist is practically in charge of this section of the Industries Department and that he is a tolerably capable hand. Being a specialist in his branch of the work, one would have expected the Director to have given him a free hand in the matter of arranging his programme of work and to adopt a policy of non-interference in matters of detail. If my information is correct, this is not what has been done. The geological survey of the State has not been completed; and instead of the Assistant being allowed to complete the work begun in South Travancore, he has been asked to proceed to the north during this monsoon period. It seems to me that interference of this nature with the work of experts is not conducive to efficient work.

I do not wish to heap the blame upon any one for all the failures and losses that we have till now sustained; but I would request Government to pause and consider whether the money spent for the geological staff of the department is not wasted and whether the department deserves to be strengthened by the addition of hands who are unable to spot out a single useful article of any commercial value.

MR. I. C. CHACKO (*Director of Industries*): Sir, before I begin to discuss the policy of the department, I should like to remove a slight misapprehension. The motion (*Louder, please*) is directed against the staff of four officers in the Geological Department, consisting of the prospector, the surveyor, the curator and the section-cutter. Originally, this staff was sanctioned for the Geological Department. But the surveyor's place was lying vacant because the prospector could formerly carry on the work of the surveyor too. I had recommended to Government that the place might be left vacant until a need therefor arose. Then, since the amalgamation of the Geological Department with the Department of Industries, these two officers—the surveyor and

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the curator-are doing the work of the Industries Department rather than that of the Geological Department; but they are both included in the budget under the geological section according to the old arrangement. In fact, only the other two, *viz.*, the prospector and the section-cutter belong to the geological section proper.

Now, I will speak something about the policy and the object of the Geological Department. The justification of anything will depend upon the view we take of its object. Now, as regards the Geological Department, people seem to be under the impression that its primary object is the discovery of minerals. I will read an extract from a report of an informal meeting of Princes held in Delhi on the 30th October, 1919, where the Director of the Geological Survey of India, Sir Henry Hayden, was also present to describe to the conference the utilisation of the geological survey of India, the Provinces and Native States. Sir Henry's observations were to the following effect :—

"He then remarked that he desired to sound a note of warning against the general tendency to regard systematic map-making as waste of time and energy and to expect a geological survey to produce immediate results in the form of mineral deposits of economic value. Without the preparation of a geological map, search for minerals degenerates into mere prospecting in which years may be spent with no tangible result. On the other hand, a systematic survey results in the production of a geological map, which is a permanent record, and which, if it does not reveal the presence of minerals, at least prevents further fruitless search for them. The wise and in the end, the only economical course was thorough scientific geological examination."

Sir, I have to tell the Council that from the very beginning the Geological Department has been keeping this ideal in view. If you read the reports of the Geological Department for the first two years, you will perceive two tendencies: one, to look for minerals to improve the economic condition of the State and send up reports thereon; and the other for mapping the country in a systematic and scientific manner. Naturally, Government could not decide which was the right tendency, and the question was referred to the Director of the Geological Survey of India, I think, in 1086 or 1087. Then the Director wrote to Government to say that the proper method was to make a systematic survey of the country and to map it out in a scientific manner. Government accepted the suggestion.

RAO BAHADUR K. A. KRISHNA AIYANGAR (*Nominated*) (*Deputy President*): May I know from Mr. Chacko the nature of the geological map which he is referring to?

MR. I. C. CHACKO (*Director of Industries*): Anybody can see the map. It has been published and is available.

PRESIDENT: What is the object of this map? What does it reveal? What is its nature? That is what Mr. Krishna Aiyangar wants to know.

MR. I. C. CHACKO (*Director of Industries*): It reveals the geological formation of the various parts of the country. I will give one instance to show the utility of such a geological survey.

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[Mr. I. C. Chacko.]

Of late, there has been much talk about lignite. This lignite is associated with what is called, in Travancore geology, the Varkalai formation. The Geological Department has all along been mapping out this formation. The Varkalai formation has, as far as could be discovered by a superficial survey, been marked on the geological map. In the report of the Geological Department there is a statement that lignite is associated with the Varkalai formation. Now, having that statement in view, if you take the geological map and have a casual look at it, you can at once know in what parts of the State you can find lignite. Further, in my report, I have stated that, in addition to the portions marked in the map, I believe that that formation extends below the silt in the backwater tract, and that what is marked may be only portions of small fringes between the backwater tracts and what I call residual laterite. This is one important use of the systematic geological map. Now, from here, I can predict where you can find lignite. I have only to look into my map. The same is the case with various other things.

I will speak something about the reported existence of kerosine near Alleppey. The Deputy President referred to it the other day; and to-day Mr. Ramakrishna Pillai has referred to it. This question has attracted my attention also. In fact, as soon as I began the survey of the State, the question of the mudbanks at Alleppey and Narakal drew my attention. There are some old records about these mudbanks and I have those records in my office. Ancient mariners had referred to it. General Cullen, Resident in Travancore and Cochin, who was very much interested in geology, was assisted by Mr. Crawford in carrying on geological explorations in Alleppey and other places. The mudbanks drew the attention of General Cullen and Mr. Crawford. They wanted to find out why these exist there. Mr. Crawford put forward the theory that the mudbanks are due to a subterranean stream from the backwater into the sea and he supposed that one terminus of that subterranean stream is in the Pamba river. He describes that he went to Chengannur where with lead and line he tried to fathom the stream, and that he lost the lead and line, and therefore could not do it. I also went there. I wanted to see whether I could fathom it myself. I had no lead and line. I took a stone and tied it to one end of a rope and asked one of my men to drop it. I was able to find out the depth. It is about 40 feet deep, or 50 feet from the level of the land. I also asked the people, who dive there for fishing, about the nature of the land underneath. They said that it was all rocky. In fact there is no subterranean stream; and Mr. Crawford's theory that the stream extends from Chengannur is incorrect. From my own knowledge of the geological structure of the country, I can say with certainty that such a subterranean stream cannot exist. My reasons are rather very technical and so I do not want to go into details here.

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Subsequently, Dr. King of the Geological Survey of India came here. He wanted to study the mudbanks. There is one peculiar property of these mudbanks. Even when the sea all round is boisterous, it is very calm over the mudbanks. This calmness of the water over the mudbanks was attributed to oil. It is known to scientists that, when there is oil floating on water, the water will not be disturbed easily. There is even a proverb about pouring oil on troubled waters. This is because oil reduces the surface tension of the water. The strength of the waves is thus reduced and there is a still surface of water. So, Dr. King supposed that it might be due to the presence of oil there. He therefore took a little of the mud and got it analysed at Calcutta. He was able to get one or two drops of oil. There is nothing surprising in that discovery. There is a lot of decaying organic matter in those mudbanks. It is a well-known fact that all organic matter may give some oil when distilled. It is not due to any subterranean oil reserve. From my own point of view, I would be very glad to investigate and try whether there is any such subterranean oil reserve. But we have to get down machines for boring holes, which are very expensive. Before I make a recommendation to Government to incur that expenditure, I should eliminate all other possible causes of this phenomenon. Mere laymen, people who have no responsibility, may make recommendations in newspapers. There are other possible factors which may cause that calm over the mudbanks. I do not want to enter into these details also here.

RAO BAHADUR K. A. KRISHNA AIYANGAR (*Nominated*) (*Deputy President*) : Am I to understand that it is not worth while investigating that question ? I merely drew his attention to a serious contribution on the subject in a leading South Indian paper. Mr. Chacko does not tell us that, as a result of his independent investigation, he has come to the conclusion that the subterranean oil reserve does not exist. What I wish to ask him is whether in his judgment it is not worth while enquiring into the matter.

MR. I. C. CHACKO (*Director of Industries*) : It will be very interesting from a scientific point of view. I must say that there is no proof of the existence of oil there. There is no direct proof which will justify any expenditure on the part of Government. For my part, I should like to see whether the Varkalai formation exists there also.

Then, Mr. Ramakrishna Pillai said that I was unduly interfering with my Geological Assistant.

MR. T. K. VELU PILLAI (*Trivandrum* cum *Nedumangad*): I wish to ask Mr. Chacko whether, during the last fifteen years, any scheme for the utilisation of the mineral wealth of the State has been formulated by the State Geologist.

MR. I. C. CHACKO (*Director of Industries*) : First of all, I may say that that is not one of the legitimate functions of the Geological Department. The legitimate function of that department is only to give all the data necessary. The rest is for the Industries Department.

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[Mr. I. C. Chacko.]

MR. T. K. VELU PILLAI (*Trivandrum* cum *Nedumangad*): My question was whether, during the last fifteen years, the Geological Department has given enough data to enable Government to embark on any such scheme.

MR. I. C. CHACKO (*Director of Industries*): As I said in the beginning, the programme of the department was to make a systematic map of Travancore. In the letter which I referred to, the Director of the Geological Survey of India has stated that all economic enquiries should be postponed until the whole country had been mapped out. We have to do things one after another.

MR. M. R. MADHAVA VARIAR (*Chengannur* cum *Pattanamtitta*): May I know from Mr. Chacko how long it will take to prepare a systematic map of Travancore?

MR. I. C CHACKO (*Director of Industries*): It will depend on the number of persons engaged in the work.

MR. M. R. MADHAVA VARIAR (*Chengannur* cum *Pattanamtitta*): What will be the time taken by the existing staff to prepare a systematic map?

MR. I. C. CHACKO (*Director of Industries*): One surveyor has been plotting it. It has only to be re-touched now.

MR. K. PARAMESVARAN PILLAI (*Tiruvalla*): I wish to know when it was plotted.

MR. I. C. CHACKO (*Director of Industries*): About two or three years ago.

MR. K. PARAMESVARAN PILLAI (*Tiruvalla*): What has been the work of the department subsequent to that?

MR. I. C. CHACKO (*Director of Industries*): Immediately after the receipt of that report, I was put in charge of the Industries Department and we have been carrying on special surveys. I will now describe—

PRESIDENT: The survey has already been embodied in a book. Why did you not say that?

MR. I. C. CHACKO (*Director of Industries*): I thought there was no necessity for that. A map also has been published and I thought every one would have seen it.

The existence of kaolin—china clay—was found out by the geological survey and my Chemical Assistant has been carrying on experiments with the same. He has succeeded in making excellent stoneware with it and is now carrying on experiments in the manufacture of porcelain. I think our investigation as far as kaolin is concerned is complete and anybody can start a factory. There are good prospects for it. That is one economic mineral which the Geological Department has found out.

Then there is the question of lignite. Samples of lignite have been sent outside and experiments have been conducted to see whether we

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can use it for industrial purposes. We take up these economic questions one by one.

Somebody asked me as to what my Assistant has been doing. He is doing a large amount of work.

RAO BAHADUR K. A. KRISHNA AIYANGAR (*Nominated*) (*Deputy President*): What will be the approximate cost of conducting the investigation at Alleppey?

MR. I. C. CHACKO (*Director of Industries*): A boring machine would cost Rs. 15,000; and then perhaps we may have to spend about Rs. 10 per foot and go to a depth of 500 feet.

PRESIDENT: They have been doing it in British Cochin, which has cost them over a lakh of rupees.

MR. I. C. CHACKO (*Director of Industries*): Yes. There will be a lot of trouble also.

I am the head of the department and I am responsible for the work of my subordinates. If any advice was in demand, I could give it to my subordinates. If that is to be regarded as interference, I do not know how the work of the department can get on, especially in the case of the Geological Assistant. Everybody knows that I was, for years, the State Geologist. I therefore claim to know the geology of the country much better than my Assistant and therefore it is my duty.

MR. N. RAMAKRISHNA PILLAI (*Vaikam cum Ettumanur*): I wish to know whether the statement made by me that the Assistant was sent to North Travancore is correct.

MR. I. C. CHACKO (*Director of Industries*): It is true. I sent him and I shall explain the circumstances.

PRESIDENT: I do not think it is necessary for you to explain the reasons.

MR. I. C. CHACKO (*Director of Industries*): Then, Mr. Ramakrishna Pillai said that the Geological Department did not discover any minerals. As a geologist, I shall not consider it as a source of pride to discover minerals. These discoveries are usually made by ordinary men. For example, I may refer to the lignite at Varkalai. It might have been a cooly who discovered it. The function of the geologist is not so much to discover as to find out the relation of minerals with the existing geological formations. When the occurrence of a new mineral has been reported, the next thing is to find out its relation, its extent and all its future possibilities. This is the function of the department.

MR. T. K. VELU PILLAI (*Trivandrum cum Nedumangad*): I wish to know whether any scientific fact has been elicited by the Travancore Geological Department about the use of lignite which has not been known to the scientific world.

MR. I. C. CHACKO (*Director of Industries*): Many.

MR. T. K. VELU PILLAI (*Trivandrum cum Nedumangad*): I asked only about lignite.

MR. I. C. CHACKO (*Director of Industries*): Not about lignite.

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[Mr. K. P. Raman Pillai.]

PRESIDENT: He meant in relation to the minerals in Travancore.

MR. I. C. CHACKO (*Director of Industries*): The existence of lignite in Travancore became known to the world through the geological reports of the department. It is true that Mr. Schomburg discovered monazite. But a report about that mineral was published by the Travancore Government as a result of the systematic survey conducted by the Geological Department of the State. In that report, which is now out of print, an account is given as to how this monazite is derived and how it comes from the disintegration products of the Travancore rocks and in what places it might be found and in how many—

MR. K. PARAMESVARAN PILLAI (*Tiruvalla*): Sir, may I know whether all that was not done after Mr. Schomburg discovered the mineral?

MR. I. C. CHACKO (*Director of Industries*): Yes, it was after the discovery. I do not claim the credit for the discovery of monazite. But it is the Geological Department that established its relation to the existing geological formation. The same may be said with regard to lignite. We have been carrying on prospecting operations for pyrrhotite.

MR. P. K. NARAYANA PILLAI (*Ambalapuzha*): What is the substance that you refer to?

MR. I. C. CHACKO (*Director of Industries*): Pyrrhotite. It can be better used as a sulphur ore than for the manufacture of iron. We generally carry on prospecting operations for—

MR. P. K. NARAYANA PILLAI (*Ambalapuzha*): Has Mr. Chacko chemically examined it from a commercial standpoint? Is the experiment on sulphur from that particular ore liable to be viewed with favor?

MR. I. C. CHACKO (*Director of Industries*): Yes. It is iron sulphide. That is used in the manufacture of sulphuric acid.

MR. K. C. MAMMEN MAPPILLAI (*Commerce and Industries, North*): So, it is a commercial proposition if the quantity is enough.

MR. I. C. CHACKO (*Director of Industries*): Yes. It has to be decided from the quantity available.

MR. P. K. NARAYANA PILLAI (*Ambalapuzha*): I am drawing attention to the percentage of sulphur.

MR. I. C. CHACKO (*Director of Industries*): I can calculate it. $Fe_{11} S_{12}$ is usually the formula. I can calculate from it.

PRESIDENT: What Mr. P. K. Narayana Pillai wants to know is whether you have ascertained the contents of that stuff.

MR. I. C. CHACKO (*Director of Industries*): Yes, I have done it. I have nothing more to add.

MR. K. P. RAMAN PILLAI (*Quilon*): I have nothing to add.

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MR. I. C. CHACKO (*Director of Industries*): I also have nothing more to say.

PRESIDENT: Do you press this motion to a vote, Mr. Raman Pillai?

MR. K. P. RAMAN PILLAI (*Quilon*): Yes.

MR. T. K. VELU PILLAI (*Trivandrum cum Nedumangad*): I wish to make a few observations.

PRESIDENT: I am afraid you are too late. Mr. K. P. Raman Pillai has waived his right of reply and Mr. Chacko has also done the same. So I put this motion to the vote of the Council.

The motion was put to vote and lost, 7 voting *for* and 25 *against*.

Motion 337.

The following motion was not moved :—

MR. S. KRISHNA AIYAR :

337. To omit the allotment of Rs. 1,300 for Geological Establishment.

Motion 338.

MR. N. RAMAKRISHNA PILLAI (*Vaikam cum Ettumanur*) Sir, I beg to move the following motion :—

338. To reduce the allotment of Rs. 3,369 for Industries Establishment by Rs. 100.

The allotment is for the weaving and the apiculture establishments.

In regard to weaving, I shall be glad to know what improved methods have been adopted during the year.

With respect to apiculture, we find this statement in the Administration Report of 1097 : "Government note with regret the retrogression in this branch of work after it once showed signs of popularity." It was in 1096 that the apiculture branch of the department which was till then only temporary was made permanent and was amalgamated with the office of the Director of Industries. The Report of 1096 says that this industry had spread to other parts of the country like Nagercoil, etc.

The work of this branch of the department consists mainly in popularising improved methods of bee-keeping. It will therefore be instructive to know what was the cause of the retrogression in this branch of work.

I understand that there is considerable scope for improvement in this industry, as by the domestication of rock-bees, raising of new species by crossing, etc.

I wish also to emphasise the fact that apiculture ought to form a branch of the Agricultural Department and not of the Department of Industries. The bees thrive well in places where there are plenty of flowers. Bee-rearing can be spread more easily, if the several demonstration farms of the Agricultural Department were asked to maintain

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[Mr. I C. Chacko.]

hives in those farms. If the subordinates of that department are given some training in bee-keeping there is every chance of this industry being more and more adopted by the people. The presence of a few hives in each farm will induce the people of the locality to have hives of their own ; the sudordinates of the Agricultural Department could also be asked to give them the necessary instructions.

In the Punjab, in Mysore, Pusa and other places, bee-keeping is carried on by the Agricultural Department. Apiculture is only a branch of the Agricultural Department and not of the Department of Industries.

I would therefore suggest that this branch of the Industries Department should be transferred to the Agricultural Department.

MR. T. K. VELU PILLAI (*Trivandrum* cum *Nedumangad*) : Sir, with reference to the last motion, I wanted to raise the question of general policy. I am glad this motion gives me an opportunity to do so. Year after year, we on this side of the House have been complaining about the inadequate results achieved by the developmnet departments, whether it be Agriculture or Industries, Co-operation or Forest. Year after year—

PRESIDENT: This does not arise here. The motion relates to weaving and apiculture.

MR T. K. VELU PILLAI (*Trivandrum* cum *Nedumangad*) : It is the general question of industries.

PRESIDENT: No.

MR. T. K. VELU PILLAI (*Trivandrum* cum *Nedumangad*) : The motion is to reduce the total allotment under Industries—Establishment.

PRESIDENT: The allotment is for weaving and apiculture as the mover himself has said.

MR. T. K. VELU PILLAI (*Trivandrum* cum *Nedumangad*) : I shall be guided by the language of the motion. As the language stands, I am entitled to speak.

PRESIDENT: That is true. But if you refer to the budget, you will see that the allotment is for a particular purpose.

MR. T. K. VELU PILLAI (*Trivandrum* cum *Nedumangad*) : I shall then withdraw.

MR. I. C. CHACKO (*Director of Industries*) : Mr. Ramakrishna Pillai wanted to know the purpose for which the itinerant inspectors are appointed.

MR. N. RAMAKRISHNA PILLAI (*Vaikam* cum *Ettumanur*) : It was not for that purpose. I want to know whether any new schemes are contemplated.

MR. I. C. CHACKO (*Director of Industries*) : It is proposed to start a demonstration weaving factory in Trivandrum and the money has been provided for that in the budget. About apiculture—

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PRESIDENT: Will you please explain in detail about the weaving institute?

MR. I. C. CHACKO (*Director of Industries*): Here in Trivandrum we will have a central technical institute. When the scheme is completed, weaving will be one of the most important subjects. Immediately, we are going to establish a Central Technological Institute when a building has been put up for that purpose. That building cannot be completed in a short time. So we propose to have as a beginning a temporary shed put up in the School of Arts premises. We will have to improve the looms and also instruction will be given in dyeing; and the textile expert will supervise the work of these itinerant instructors all over the country. Just now, as the Council may be aware, I have got one peripatetic instructor who goes about the country giving instruction and advice to the weavers. But one is not sufficient. I get many requisitions from different parts of the country. It is found that at least two itinerant instructors are necessary. These itinerant instructors will take patterns of improved looms from the central establishment and popularise them in the country.

MR. J. JOHN NIDIRY (*Changanachery* cum *Minachil*): May I know from Mr. Chacko whether the weaving industry has not already been popularised in south Travancore and whether it is not in north Travancore that the people stand in need of it?

MR. I. C. CHACKO (*Director of Industries*): Weaving is spreading in north Travancore also, rather taking root, and we are trying to spread it there.

MR. M. R. MADHAVA VARIAR (*Chengannur* cum *Pattanamtitta*): Is the department doing anything for popularising spinning?

MR. I. C. CHACKO (*Director of Industries*): No. We are not doing anything ourselves.

MR. M. R. MADHAVA VARIAR (*Chengannur* cum *Pattanamtitta*): Is there no instructor for that?

MR. N. RAMAKRISHNA PILLAI (*Vaikam* cum *Ettumanur*): May I know whether it is possible to send some one to north Travancore?

PRESIDENT: It is with that view that we are having at least one additional man.

MR. P. K. NARAYANA PILLAI (*Ambalapuzha*): Have they, the itinerant instructors, anything like a permanent office in north Travancore?

MR. I. C. CHACKO (*Director of Industries*): No, but they will be camping in various places.

As regards apiculture, I also think that it is a very useful occupation. In America, for example, there are big apiaries and these apiculturists make enormous profits. One essential condition for the existence of apiculture is forest. Everybody knows bees collect honey from flowers. So this apiculture can thrive more on the borders

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[Mr. Tariatu Kunjitomman.]

of forests and also where there is toddy-tapping. Bees are licensed thieves and they get into toddy pots. I agree with Mr. Ramakrishna Pillai in thinking that it is better to place it under the Agricultural Department. I am not very anxious to keep it.

MR. A. HOOGEWERF (*Nominated*): Sir, weaving was the cottage industry practised by one of our first parents—Eve. Spinning and weaving are connected with the national movement, the *charka* being the emblem of the movement. I came across several people in Kadakavur near Anjengo who have taken to weaving, some of them whose occupation before was tapping. But the cloth woven by them is of inferior quality. I am glad to hear from the Director of Industries that a technical institute is to be established in Trivandrum. I hope similar institutes will be opened in other parts of the country and that many more people will take to weaving.

MR. TARIATU KUNJITOMMAN (*Muvattupuzha*): വ്യവസായ ഡിപ്പാർട്ട്മെൻറിൽനിന്നു പല കാര്യങ്ങൾക്കായി പലവിധം ചിലവുചെയ്യുവരുന്നു എന്ന് പത്രം വഴിയായും മറ്റും അറിഞ്ഞിട്ടുണ്ട്. എന്നാൽ ഉത്തരതിരുവിതാംകൂറിൽ ഇതിൻറെ അനുഭവം തീരെ ഏൽക്കുന്നില്ല. കോട്ടയത്തിനു വടക്കുവശം യാതൊരു വ്യവസായവും പ്രോത്സാഹിപ്പിക്കുയോ ഗ്രാൻറു കൊടുക്കുയോ ചെയ്യുന്നതായി അറിയുന്നില്ല. നെയ്ത്തുതന്നെ തെക്കൻതിരുവിതാംകൂറിൽ പണ്ടേ നടന്നുവരുന്ന ഒന്നാണ്. അധികം ഉള്ളവർക്കുതന്നെ കൊടുക്കുക എന്ന സമ്പ്രദായം മറ്റുഡിപ്പാർട്ട്മെൻറിനെപോലെ തന്നെ ഈ ഡിപ്പാർട്ട്മെൻറും സ്വീകരിച്ചു തുടങ്ങിയിരിക്കുന്നു. വടക്കൻ തിരുവിതാംകൂറിൽ നെയ്ത്തു പ്രചരിപ്പിച്ചിരുന്ന കാലത്തിൽ വളരെ നന്നായിരുന്നു. വടക്കൻ തിരുവിതാംകൂറിലുള്ളവർക്കു ഗ്രാൻറുകൊടുത്തു നെയ്ത്തു വ്യവസായത്തിന് വല്ലതും പ്രോത്സാഹനം ചെയ്യുവരുന്നതിനെ കുറിച്ചു ഡയറക്ടർതന്നെ പറഞ്ഞാൽ കൊള്ളാം. വ്യവസായഡിപ്പാർട്ട്മെൻറിൽ നിന്നും ഇതിലേക്കു വലിയ സംഖ്യ ചിലവുചെയ്യുവരുന്നുണ്ട്. അതു നല്ലതാണെന്നു ഞാനും സമ്മതിക്കുന്നു. രാജ്യത്തിൻറെ ചില ഭാഗങ്ങളിൽ ഇതെല്ലാം ചിലവുചെയ്യുയാണെങ്കിൽ മറുഭാഗത്തുള്ളവർക്കു വളരെ സങ്കടകരമായിരിക്കും. എന്നുമാത്രമല്ല, അതു രാജ്യത്തിലെ പൊതു ശ്രേയസ്സിനു ഹാനികരവുമായിരിക്കും. ഞാൻ ഉത്തരതിരുവിതാംകൂറിനെപ്പറ്റി പറയുമ്പോൾ രാജ്യത്തിൻറെ ഒരു ഭാഗത്തെ മാത്രം ചൂണ്ടിക്കാണിച്ചു പറയുന്നു എന്നു തോന്നുമായിരിക്കാം. എന്നാൽ യാതൊരു പ്രോത്സാഹനവും ലഭിക്കാതാസ്ഥലങ്ങളെ ചൂണ്ടിക്കാണിക്കേണ്ടതു എൻറെ കടമയാണെന്നു ഞാൻ വി

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ചാർക്കുന്നു. അതിനാൽ ഉത്തരതിരുവിതാംകൂറിലേക്കു വ്യവസായവകുപ്പിന്റെ കീഴിൽ തേനീച്ച പ്രത്യേകം ഗവർൺമെൻറ് പരിപാലിക്കേണ്ടതാണ്. ഇതു മാത്രമേ എനിക്ക് ഇതിനെപ്പറ്റി പറയാനുള്ളൂ.

MR. PAUL V. DANIEL (*Agastiswaram*): Sir, I am also informed, and I believe correctly so, that except in Travancore, bee-keeping is carried on by the Agricultural Department and, that it is a unique anomaly that only in Travancore the apicultural section of the department is taken out of its natural place and is grafted on to the Department of Industries. This false alliance has been noticed both by the public and the press. It has been suggested that the apicultural section should be transferred to its natural place.

Agricultural experts, who have been tackling the problem of improving fruit and fruit trees, have found out that pollination is indispensable for fruit production and that under cross pollination the yield of the tree is greatly enhanced and the quality of the fruit is considerably improved, and that the bee is one of the chief agents in promoting cross pollination. Thus apiculture becomes intimately connected with agriculture.

We have now the demonstration apiary at Trivandrum and its activities are mainly confined to the town. The Bee Expert is of course touring round the country, instructing people in bee-culture. But, if something substantial should be done, apiculture must be transferred to the Agricultural Department. The Bee Expert can easily train the Agricultural Inspectors or others in charge of the experimental and demonstration farms in the several taluks and thereby bee-rearing can be spread easily all over the State without incurring extra cost. The presence of a few bee-hives in each farm will induce people of the locality to have hives of their own, and when the fact that the improvement of the fruits in the several farms is partly due to the presence of the hives comes to the knowledge of the agriculturist, he will be all the more desirous of having some hives in his own farm. The local men trained by the apiculturist can help and advise the farmers to instal hives and the little difficulties that crop up in the course of their attempts at bee-rearing can be overcome by local help.

I, therefore, take pleasure in supporting the motion.

MR. N. RAMAKRISHNA PILLAI (*Vaikam* cum *Ettumanur*): It is not because the Director of Industries may not be able to bestow any attention on this matter that I suggested that it might be transferred to the Agricultural Department. It appeared to me that this bee-keeping is eminently fitted to be a bye-occupation to the agricultural population; and it is because bees are useful for this very purpose that I made this suggestion. There are a good many departmental farms in the State and it would be certainly advantageous for us if it is introduced in the Agricultural Department.

PRESIDENT: Do you press this motion?

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[Mr. K. P. Raman Pillai.]

MR. N. RAMAKRISHNA PILLAI (*Vaikam* cum *Ettumanur*): I do not press it.

The motion was by leave withdrawn.

Motion 339.

The following motion was not made:—

MR. K. P. RAMAN PILLAI:

339. To reduce the allotment of Rs. 4,700 for travelling allowance by Rs. 2,200.

Motion 340.

MR. V. KUNJUKRISHNA PILLAI (*Chirayinkil*): Sir, I beg to make the following motion:—

340. To reduce the allotment of Rs. 5,400 for scholarships and stipends by Rs. 2,000.

This sum for scholarships and stipends is not of much importance here now. The recipients of stipends and scholarships in Travancore gain nothing after the course of examination.

PRESIDENT: Gain what?

MR. V. KUNJUKRISHNA PILLAI (*Chirayinkil*): Gain nothing after passing the examination. I know many persons who have passed examinations but are wandering about for want of any job. So, let us consider and see how these diploma-holders thrive in the State. I do not know whether stipends and scholarships given to students outside the State are included in this item. I should like to know that from Mr. Chacko. I think we can reduce an amount of Rs. 2,000 on these two items together.

MR. I. C. CHACKO (*Director of Industries*): Sir, the sum of Rs. 5,400 is provided for the scholarship awarded to Mr. Gopala Menon who is in England. This sum will just cover his scholarship which the Government are bound to pay him next year.

MR. V. KUNJUKRISHNA PILLAI (*Chirayinkil*): What about the stipends and scholarships given here?

MR. I. C. CHACKO (*Director of Industries*): They are not included in this sum.

MR. V. KUNJUKRISHNA PILLAI (*Chirayinkil*): Then I withdraw the motion.

The motion was by leave withdrawn.

Motion 341.

The following motion was not made:

MR. S. KRISHNA AIYAR:

341. To omit the allotment of Rs. 700 for prospecting charges.

Motion 342.

MR. K. P. RAMAN PILLAI (*Quilon*): I beg to make the following motion:—

342. To omit the allotment of Rs. 5,900 for purchase of apparatus and chemicals and laboratory fittings for experiments in oils.

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My submission is that we might well take advantage of the experiments that have been made elsewhere and see whether there is any industry that could be started on a commercial scale, so far as oils in Travancore are concerned. I contend that no new or fresh experiment need be made here.

MR. I. C. CHACKO (*Director of Industries*): Sir, Mr. Raman Pillai says that no experiments need be carried on in Travancore on oils. I do not know what effect arguments could have on one who has come to that conclusion. But, anyhow, I think the members on the other side have been complaining that we are exporting raw materials before manufacturing them into finished products. I suppose the Council will accept that the ideal to be aimed at is the manufacture of raw materials into finished products. Now, oils form one of the chief raw materials in Travancore. Among the oils, cocoanut oil is of course the most prominent. I do not think there is much to be done in that direction, because cocoanut oil, being famous throughout the world, many chemists have found all that could be found out of it.

MR. T. K VELU PILLAI (*Trivandrum cum Nedumangad*): Can Mr. Chacko assure the House that all that could be found out has been found out and nothing new could be discovered ?

MR. I. C. CHACKO (*Director of Industries*): I cannot affirm that. I think my meaning has been understood by Mr. Velu Pillai.

MR. A. HOOGEWERF (*Nominated*): I wish to ask Mr. Chacko to give us an idea of how butter is made out of cocoanut oil.

MR. I. C. CHACKO (*Director of Industries*): That has already been found out; *we* need not find it out.

MR. A. HOOGEWERF (*Nominated*): But butter is not manufactured out of oil in Travancore.

PRESIDENT: That is for the business-man.

DEWAN BAHADUR Dr. P. N. LAKSHMANAN (*Darbar Physician*): With regard to butter I may say—

PRESIDENT: You are not in possession of the House. You cannot answer Mr. Hoogewerf now.

DEWAN BAHADUR Dr. P. N. LAKSHMANAN (*Darbar Physician*): As he put a question, I thought I might explain the matter to him now.

PRESIDENT: You can do it afterwards in your speech, after Mr. Chacko has sat down.

MR. I. C. CHACKO (*Director of Industries*): Besides cocoanut oil, we have a large quantity of fish oil being exported. The Oil Chemist has been making a survey of oil seeds found in Travancore, visiting various centres and finding out from merchants and others what kind of oil-seeds could be had in various places in Travancore. An important item on which he has made a report is fish oil. He finds that a large quantity of it is available here. The oil is not extracted because there is no great demand for it in the raw state in which it is supplied in

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[Mr. I. C. Chacko.]

Travancore. Well, the fish oil affords a large field for work. Then there is the laurel oil—

MR. M. R. MADHAVA VARIAR (*Chengannur* cum *Pattanamtitta*): I wish to know whether the Fishery Inspector is making any experiment with regard to the fish oil.

MR. I. C. CHACKO (*Director of Industries*): I do not know.

PRESIDENT: He cannot make experiments on fish oil, but only on fish.

MR. N. PADMANABHA PILLAI (*Karunagapalli*): Has the Agricultural Chemist in the Agricultural Department carried on any investigation in regard to fish oil?

PRESIDENT: I do not know if Mr. Chacko can say what experiments are being carried on by the Agricultural Department.

MR. I. C. CHACKO (*Director of Industries*): And then there is the laurel oil, the *marotti* oil—.

MR. M. K. KHADIR PILLAI (*Nominated*): What is laurel oil?

PRESIDENT: *Punnakka ennai.*

MR. I. C. CHACKO (*Director of Industries*): These oils are useful for candle and soap-making and for the manufacture of lubricating oils. All these we have to investigate.

About the Oil Chemist, I have to point out that his designation is something in the nature of a misnomer. It is true that the present Oil Chemist has specialised in oils; but, besides, he is an all-round chemist who has had a good training in chemistry in the Liverpool University. Every Industries Department should have on its staff an Industrial Engineer and a Chemist. These two form, I think, the essential minimum of the staff of an Industries Department. In almost all the Industries Departments, you will find that a Chemist and also an Industrial Engineer and other experts are employed. But the Textile Expert and the Tanning Expert are of local importance only. In some countries, the Tanning Expert may not be necessary. But an Industrial Engineer and Chemist are quite necessary in any department of Industries. Every industry has an engineering aspect and most industries have a chemical aspect. Our Oil Chemist is appointed to further chemical industries; of course, cottage industries form an important part of the work of the Industries Department. But, still, to develop the country to its fullest extent we must have a chemist too. Unfortunately this chemist has been named Oil Chemist because he has specialised—

MR. M. R. MADHAVA VARIAR (*Chengannur* cum *Pattanamtitta*): Cannot these experiments be made in the College Laboratory?

MR. I. C. CHACKO (*Director of Industries*): Not all; some of them may be made. The College Laboratory is equipped for teaching purposes.

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MR. M. R. MADHAVA VARIAR (*Chenganmur* cum *Pattanamtitta*): Could not the experiments about oil be made there? I read something about some such experiment in the Administration Report.

MR. I. C. CHACKO (*Director of Industries*): That is about essential oil. Professor Moudgill is doing some experiments with regard to that. But in regard to fatty oils, we have to do the work ourselves.

MR. N. RAMAKRISHNA PILLAI (*Vaikam* cum *Ettumanur*): What is meant by essential oil?

MR. I. C. CHACKO (*Director of Industries*): We shall have to enter into an abstruse discussion to explain that.

MR. P. K. NARAYANA PILLAI (*Ambalapuzha*): May I know how many experiments have been conducted by the Oil Chemist since his entertainment?

MR. I. C. CHACKO (*Director of Industries*): He has had no opportunity to make any experiments. He has been making a survey of the country. He is studying the possibility of extending the supply of seeds. He has sent up a report which is before the Government.

PRESIDENT: What Mr. Chacko says is that the Chemist has completed his survey and that this provision is made just to enable him to begin his experimenting work.

MR. A. HOOGEWERF (*Nominated*): I wish to know whether any butter has been made here out of cocoanut oil and demonstrated to the public.

MR. I. C. CHACKO (*Director of Industries*): No, the Industries Department has not done anything in that direction.

MR. P. K. NARAYANA PILLAI (*Ambalapuzha*): May I know whether the department proposes to enter into the question of ascertaining the chemical composition of these various oils?

MR. I. C. CHACKO (*Director of Industries*): The department wants to encourage the industry that may be started.

MR. K. C. MAMMEN MAPPILLAI (*Commerce and Industries, North*): Will the member please give the names of some possible industries that may be started?

MR. I. C. CHACKO (*Director of Industries*): Soap-making and candle-making. There is some soap-making here; now it is done by the cold process. The difficulty in the cold process is that you cannot finely adjust the proportion of caustic soda and oil.

MR. M. R. MADHAVA VARIAR (*Chenganmur* cum *Pattanamtitta*): Could we not profit by the experiments made outside the State?

MR. I. C. CHACKO (*Director of Industries*): In some cases we do profit by that. But I must tell him that even to understand the researches made elsewhere there must be somebody who knows the subject.

MR. M. R. MADHAVA VARIAR (*Chenganmur* cum *Pattanamtitta*): The motion before the House is to reduce the allotment for the purchase of apparatus and chemicals.

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[President.]

PRESIDENT: Mr. Chacko, he wants to know what is the need for local research. Could you not profit by the research elsewhere?

MR. I. C. CHACKO (*Director of Industries*): Such things have not been investigated abroad.

MR. K. C. MAMMEN MAPPILLAI (*Commerce and Industries, North*): For example?

MR. I. C. CHACKO (*Director of Industries*): Laurel oil.

MR. P. K. NARAYANA PILLAI (*Ambalapuzha*): Does he mean to say that laurel oil has not been subjected to experiment hitherto?

PRESIDENT: There are other oils; there is the fish oil.

MR. G. PARAMESVARAN PILLAI (*Neyyttinkara*): I move that the question be now put.

The motion for closure was put and duly carried.

MR. M. R. MADHAVA VARIAR (*Chengannur* cum *Pattanamtitta*): The immediate object of local research may be explained.

PRESIDENT: Yes, Mr. Chacko may explain it in his reply.

MR. K. P. RAMAN PILLAI (*Quilon*): I have nothing to say.

MR. I. C. CHACKO (*Director of Industries*): I will take laurel oil. We have to find out the constitution of the oil. We have to get rid of the nasty smell of the laurel oil. All these can be accomplished in the case of other oils. But this has not been done with regard to laurel oil. Similarly with regard to other oils.

As I said before, the Oil Chemist is in charge of not only the research on oils but also of other chemical problems that come up before the department. For the investigation of it, a laboratory is necessary.

MR. M. R. MADHAVA VARIAR (*Chengannur* cum *Pattanamtitta*): Has he proposed any scheme for oil industries?

MR. I. C. CHACKO (*Director of Industries*): Yes, he has proposed a scheme and it is before the Government.

PRESIDENT: Do you press the motion, Mr. Raman Pillai?

MR. K. P. RAMAN PILLAI (*Quilon*): I press it to the vote.

PRESIDENT: I will say a few words in regard to what I think is the function of this Chemist. This Chemist and other Experts whom we have recently entertained are put first of all on survey work. This Oil Chemist has already completed the survey and he has made his report. I have read it. He has to go round and tour the country. He has to find out what raw products could be had and the quantities in which they could be had. Then we have to see whether there is a market for them and whether it is worth while experimenting upon things which could be had only in stray places. If we are satisfied that a large quantity of an article could be obtained, we will see that it is pressed into crude oil for being exported or otherwise used. Then it

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is the function of the Chemist to see for what purposes that article could be used—whether it could be converted into soap or candle or lubricants. Some of the oils are of a highly medicinal value like the *marotti* oil which Mr. Chacko mentioned. These oils are used for diverse purposes. Then it is for the department to see whether it can now demonstrate and push these things and recommend them to the public for private enterprise. That is the idea. This Oil Chemist, as Mr. Chacko explained, is not an oil chemist alone but is a chemist for the whole department. And this provision is for his research work. If Mr. Raman Pillai still wishes the motion to be put to the vote, I shall do so.

MR. K. P. RAMAN PILLAI (*Quilon*) : I withdraw it.

The motion was by leave withdrawn.

Motion 343.

MR. K. P. RAMAN PILLAI (*Quilon*) : I beg to make the following motion :—

343. To omit the allotment of Rs. 4,000 for equipment, tools, etc., for the Tanning Expert.

I submit that tanning has been made a fine art elsewhere and therefore no profitable use would be made by further experiments on that. If it is supposed that the industry may be done on a factory scale, that too may be done without resorting to any experiment.

MR. I. C. CHACKO (*Director of Industries*) : Sir, the object of my demand for the Tanning Expert is not to start a tanning factory. For the present at least, it is not the object of the Department of Industries to run a tannery on a factory scale. We have very many kinds of tanning materials in Travancore. For example, this morning, before I came to the Council, I had an enquiry from Sweden for the extract of mangrove. It is called in Malayalam *kandal*. It grows abundantly along the backwaters at Shertallai, Trikkunnapuzha and other places. There are various other indigenous tanning materials.

MR. K. C. MAMMEN MAPPILLAI (*Commerce and Industries, North*) : Are they peculiar to Travancore ?

MR. I. C. CHACKO (*Director of Industries*) : No.

MR. K. C. MAMMEN MAPPILLAI (*Commerce and Industries, North*) : Then other countries might have investigated their properties.

MR. I. C. CHACKO (*Director of Industries*) : Yes. They have made reports and I have read one of them. In the Philippine Islands and the Sunderbands, there are mangroves. But the tanning quality varies from place to place. Mr. Pilgrim who has investigated this says that the tanning property varies from place to place. I have that report with me. As I told you, the quality varies from place to place. Our mangroves have therefore to be investigated.

MR. T. K. VELU PILLAI (*Trivandrum cum Nedumangad*) : I wish to know whether in 1098 there had been conducted any research or experiments in tanning worth mentioning in this Council.

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[MR. M. N. Pillai.]

PRESIDENT: No experiments have been made.

MR. T. K. VELU PILLAI (*Trivandrum cum Nedumangad*): Last year we sanctioned a sum.

PRESIDENT: To entertain an expert, not for experiments.

MR. T. K. VELU PILLAI (*Trivandrum cum Nedumangad*): I wish to know whether the Tanning Expert has done any substantial work, whether any tangible results have followed, and whether it is possible to find out a way in which work may be done.

MR. I. C. CHACKO (*Director of Industries*): Yes. He has sent a report to Government.

MR. T. K. VELU PILLAI (*Trivandrum cum Nedumangad*): I want to know whether any particular course of action has been recommended; I do not want to know whether he has sent up a report.

MR. I. C. CHACKO (*Director of Industries*): Yes. What he has done is to suggest that a demonstration in tannery should be started for testing the tanning materials in Travancore and giving an impetus to the tanning industry in Travancore. I find from the statistics that about 1,50,000 hides have been exported besides 10,500 hides locally tanned.

MR. P. K. NARAYANA PILLAI (*Ambalapuzha*): May I know whether this was not the expert who, we were told, was in search of water for tanning? (*Laughter.*)

MR. I. C. CHACKO (*Director of Industries*): Yes.

MR. P. K. NARAYANA PILLAI (*Ambalapuzha*): May I know whether he has come across a sufficient quantity of water? (*Laughter.*)

MR. I. C. CHACKO (*Director of Industries*): Yes, he has.

Of this large number of hides and skins, I understand only about 12,000 are tanned within the State. The export of these skins and hides in the raw state is an extravagant practice. That is because these untanned hides become deteriorated; and when they reach the place where they are bought their value becomes less. In British India—I do not know tanning myself, but I have read a number of reports from the departments of industries—I know large quantities of these hides are now exported in the semi-tanned condition. Anyhow we have the profits of manufacture in the semi-tanned kind. In Cochin a factory has been established which is trying the finishing of leather. But there is a difficulty there. We can dispose of finished leather only; in all civilised countries, they have a big tariff wall against finished leather.

MR. M. N. PILLAI (*Trivandrum*): I want to know whether the Cochin tannery is working satisfactorily from a commercial standpoint.

MR. I. C. CHACKO (*Director of Industries*): I heard at one time that it was not working satisfactorily. I do not know how it is now.

MR. M. N. PILLAI (*Trivandrum*): I want to know how it is working now.

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PRESIDENT: There is no reliable information.

MR. I. C. CHACKO (*Director of Industries*): It is conceded by all that it will be a paying thing to tan the leather in the country and to export it in the semi-tanned condition.

MR. T. K. VELU PILLAI (*Trivandrum cum Nedumangad*): May I know if this is the discovery made in 1098?

MR. I. C. CHACKO (*Director of Industries*): No, this is not a discovery.

Now the question to be decided is whether we should export all these hides and skins in the raw state or in a more or less manufactured condition. The consensus of opinion is that we should manufacture these materials either into fully finished or partly finished products. For this purpose, I think it is necessary to go on with these experiments. The tanning done in the country, I understand, is in a very crude way. There are two or three chrome tanneries at Chengannur which turn out a few crude hides. There is a tannery at Quilon where tanning is done by vegetable materials. The intention is to have the semi-tanned leather intended for export tanned with vegetable tanning materials. Chrome-tanned materials are not bought abroad. My object in making this demand is to see whether we can semi-tan the hides and skins now available in Travancore in the shape of raw materials and demonstrate to the people the possibilities of that industry.

MR. M. R. MADHAVA VARIAR (*Chengannur cum Pattanamtitta*): Sir, I support this motion. Last year we were told that the Tanning Expert was appointed on probation for one year to ascertain the quantity of skins and hides in the country and the quantity of proper water available for the purpose and for the selection.

PRESIDENT: Not the quantity, but the places where proper water was available.

MR. M. R. MADHAVA VARIAR (*Chengannur cum Pattanamtitta*): We were told as follows:—

"The selection of a site is a very important thing. A large quantity of water of a particular quantity is required for running a tannery, and a large quantity of tan-yard refuse has to be disposed of without causing public nuisance. These are some of the duties the Tanning Expert has now to attend to. What use we may make of him in the future will depend largely on the results of the present investigations".

Further it was observed by the President last year:—

"A Tanning Expert will have to find out whether he has got the required quantity of hides and skins, and if so, of what quality, and see whether there are places where the industry could be profitably introduced".

I think by this time the Tanning Expert might have found out the quantity of hides and the places where proper water could be had. If these things are found out, what should be done is to establish a tanning factory in Travancore and to demonstrate to the people the usefulness of the tanning industry.

PRESIDENT: That is exactly what Mr. Chacko says we are going to do. A demonstration factory, that is what he says. It is not on

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[Mr. I. C. Chacko.]

a factory scale, but only to demonstrate tanning by means of the various materials available.

MR. M. R. MADHAVA VARIAR (*Chengannur* cum *Pattanamtitta*): Even now tanning is done in various parts of Travancore and Mr. Chacko was telling us that the tanning done in Travancore was very crude and it is to demonstrate better tanning that this money is to be spent. But I think, if the utility of tanning is not demonstrated to the people by starting a factory and then handing over that factory to private agency, the tanning industry will not thrive in Travancore. For that purpose, the allotment proposed is inadequate.

PRESIDENT: I think there is a misunderstanding. What Mr. Chacko told you is that it is not the intention of the Government to start a factory on a factory scale or a business scale but to start a demonstration station where the various processes of tanning by means of different local materials could be conducted and demonstrated to the people, where the various tanning materials could also be experimented upon and the results of tanning with those materials could also be demonstrated to the people—that is what he said. He said it would be a small factory, a factory for demonstration purposes merely.

MR. M. R. MADHAVA VARIAR (*Chengannur* cum *Pattanamtitta*): He is now for experimenting; and demonstration can be had only after experiment.

PRESIDENT: It is for experiment and demonstration. Both must be carried on side by side.

MR. K. P. RAMAN PILLAI (*Quilon*): I have nothing to add.

MR. I. C. CHACKO (*Director of Industries*): I think Mr. Madhava Variar asked whether it was the intention of Government to hand over this factory to private agencies, and he complained that the money provided is not enough. The tanning industry can be started with any amount of capital, even with Rs. 100. All that you want—

MR. P. K. NARAYANA PILLAI (*Ambalapuzha*): Why then do you want all this money? Why not Government start it with Rs. 100?

MR. I. C. CHACKO (*Director of Industries*): Government should do all this. We have to demonstrate all this. If that is to be enlarged later on, there is no difficulty in it, provided we choose the site properly now.

MR. M. R. MADHAVA VARIAR (*Chengannur* cum *Pattanamtitta*): What is the site selected for demonstration?

MR. I. C. CHACKO (*Director of Industries*): We have not come to any definite conclusion.

PRESIDENT: Louder, please.

MR. I. C. CHACKO (*Director of Industries*): But I may say that we have selected the abandoned agricultural farm near Karamanai. So this small factory may be expanded to any size which the Government may deem necessary later on.

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MR. M. R. MADHAVA VARIAR (*Chengannur* cum *Pattanamtitta*) : Will there be a school to teach tanning along with demonstration ?

MR. I. C. CHACKO (*Director of Industries*) : It is not now definitely in contemplation ; but a school will have to be attached.

MR. J. JOHN NIDIRY (*Changanachery* cum *Minachil*) : Is not Alwaye water better than Karamanai water ?

MR. I. C. CHACKO (*Director of Industries*) : But then there is one defect about it. This tannery should be as near as possible to the central laboratory here. All the research work has got to be done there ; and at the same time the tannery cannot be within the municipal limits. So we want it just outside the municipal limits, but, as far as possible, near the laboratory.

PRESIDENT : Mr. Raman Pillai, do you press this motion ?

MR. K. P. RAMAN PILLAI (*Quilon*) : I do not press the motion.

The motion was by leave withdrawn.

Motions 344 to 355.

The following motions were not made :—

MR. K. P. RAMAN PILLAI :

344. To omit the allotment of Rs. 4,000 for general equipment.

MR. V. KUNJUKRISHNA PILLAI :

345. To reduce the allotment of Rs. 4,000 for general equipment by Rs. 2,000.

MR. K. P. RAMAN PILLAI :

346. To omit the allotment of Rs. 1,000 for experiments in pottery.

MR. V. KUNJUKRISHNA PILLAI :

347. To reduce the allotment of Rs. 1,000 for experiments in pottery by Rs. 500.

MR. K. P. RAMAN PILLAI :

348. To omit the allotment of Rs, 2,200 for contributions.

MR. V. KUNJUKRISHNA PILLAI :

349. To reduce the allotment of Rs. 2,200 for contributions by Rs. 500.

MR. K. P. RAMAN PILLAI :

350. To reduce the total allotment of Rs. 49,464 for Direction by Rs. 7,200.

MR. M. N PILLAI :

351. To reduce the total allotment of Rs. 49,464 for Direction by Rs. 100.

MR. K. P. RAMAN PILLAI :

352. To reduce the allotment of Rs. 23,418 for Industrial School of Arts by Rs. 100.

MR. K. P. RAMAN PILLAI :

353. To omit the allotment of Rs. 1,200 for First Assistant.

MR. K. P. RAMAN PILLAI :

354. To reduce the allotment of Rs. 58,281 for Technical Instruction by Rs. 8,614.

MR. K. P. RAMAN PILLAI :

355. To reduce the allotment of Rs. 7,792 for Industrial Engineer and Chief Boiler Inspector by Rs. 100.

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[Mr. T. K. Velu Pillai.]

Motion 356.

MR. M. R. MADHAVA VARIAR (*Chengannur* cum *Pattanamtitta*) : I beg to move the following :—

356. To reduce the total allotment of Rs. 1·35 lakhs under Demand XIV by Rs. 100.

Sir, the intention of the Industries Department is to protect certain indigenous industries and promote industries on a large scale. The department has been hitherto trying to popularise certain cottage industries in the country, and the chief cottage industry to which the attention of the department has been directed is the weaving industry. But the department has not undertaken to do any propaganda work with regard to spinning. Spinning was a thriving cottage industry in Travancore. But on account of the importation of foreign yarn and the starting of mills, the industry has considerably waned in this country. So, to resuscitate that industry, the department has to do sufficient propaganda work ; and we were told by Mr. Chacko that even an inspector in spinning is not appointed by the department. It may be argued that when we get foreign yarn there is no use in popularising spinning in this country. We may get foreign yarn easier than local yarn or even double the quantity of it for the same price. But what we have to do is to protect our industry which has been destroyed by the importation of foreign yarn. So, I think, the Department of Industries must bestow particular attention upon the popularising of spinning as a cottage industry in the country.

Another point which I have to emphasise is that the Department of Industries has not proposed any scheme on a large scale for the industrial regeneration of the State. Hitherto the department was satisfied with experiments ; and even now the department is trying to make researches with regard to the various industries. Nothing has come out of these researches. I think the industrial salvation of this country depends upon the starting of certain big industries by the Government and by handing them over to the people ; then only will the people be able to come forward with their capital to start these industries. I make this motion to bring these points to the notice of the House.

MR. T. K. VELU PILLAI (*Trivandrum* cum *Nedumangad*) : Sir, I was rather eager to speak on a question of general policy connected with the Industries Department and that is due to the fact that I am eager to obtain some results for the money we have been spending for a number of years on the Development Departments. Each time, Sir, these departments come for a grant before this Council, these Development Departments—all of them—say that there are certain very important experiments being performed by their competent staff, and that, if only we give them the allotments asked for, they will be able to show tangible results and to establish prosperity where to-day there exists nothing but poverty. We have been listening to these speeches for a very long time. Government also in perfect good faith have accepted the testimony of departmental heads with regard to the possible success of the measures initiated

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by them. But to one who reads the annual reports of these Development Departments carefully, Sir, it would occur that, year after year, this same kind of facts—I would even say, almost the same sentences—are repeated, though certain figures are selected in a very dexterous fashion to serve the purpose of withholding from the world the truth about the actual working of the particular departments. I do not for one moment want to condemn the activities of these departments. I am only saying this because of a desire to see something tangible, so that, if the present generation is asked to contribute the profits of their labour to the successful termination of this work, it should be because they should see that their successors at any rate will be benefited by this vast series of experiments performed by the different departments of the Government. Sir, the working of these Development Departments—I am speaking with particular reference to the Department of Industries because we are considering that department—the working of these departments is not as satisfactory as it should be. Government are to a very great extent handicapped because each of them is a technical department. I am for taking stock of the success achieved by these various departments; and it will be necessary to appoint a person or a body of persons with sufficient technical skill, whether from Travancore or outside, to examine carefully their working during the last fifteen or twenty years, to suggest improvements if improvements are necessary, and to lay down a scheme which should be worked with advantage. Year after year, Sir, we are invited to a happy valley in the future, where the scientific departments will diminish the difficulties of the future. But I for one should decline that kind invitation. Mr. Chacko has observed that bees gather honey from flowers; but we gather the honey of our wisdom from the thorns of our despair, because we fail to see any adequate recompense for the sums that the Government have been sanctioning for the upkeep of these departments. I do not want to talk at length on this motion, Sir. But the point I wish to impress upon this House is that we should not, from time to time, lay the flattering unction to our soul that we are now in the course of progress towards a happy termination of things, for the simple reason that we are given sanguine assurances based on general principles known to all the world. I am for a due enquiry being instituted; and, if these Development Departments want more money, this Council will certainly rise equal to the occasion and give them all that they want. But a disquisition about the necessity of scientific training, about the necessity of experiments and a kind of involved and laborious story with regard to the doing of this particular department or that will not any further commend itself to this House. With these words, I am very glad to support Mr. Madhava Variar's motion.

MR. A. HOOGEWERF (*Nominated*) : The history of the Industries Department in Travancore we cannot be proud of. It is one of mistakes and failures. All experiments more or less lead on to a blind alley. There are tremendous possibilities for industries in Travancore. It is useless harping on what is already past. As I said the other day, let the dead past bury its dead. We now have at the head

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[Mr. K. Parameswaran Pillai.]

of the department one who is thoroughly conversant with the subject, one who is not only experienced, but who has high educational qualifications which he secured in Europe. I hope that a new chapter will be opened in this department. These are just a few remarks that I have to make on this subject.

MR. K. C. MAMMEN MAPPILLAI (*Commerce and Industries, North*): We shall no doubt be thankful if the Industries Department succeeds in starting and bringing to a high state of efficiency any one industry; but personally my whole desire has been to see that the various disorganised struggling industries in the country should be organised and brought to a successful stage by the sympathetic help that the Industries Department, the Co-operative Department and the Agricultural Department in unison can give them. I see there are so many small cottage industries in the country which, owing to want of proper financing, owing to want of proper organisation for buying raw materials and selling them in bulk, and owing to the absence of technical direction, are all struggling and in difficulties. From what has been successfully done in other countries, I am convinced, without aiming at impossible things or pitching our ambition too high, that if these three departments of our Government join together and put their heads together to help the people to organise their industries, a great deal can be done. I merely want to invite the attention of the Government and the departments concerned that they will do something in the way of encouragement and organisation of these small industries; and in the absence of—

MR. J. JOHN NIDIRY (*Changanachery* cum *Minachil*): Is it not the work of the Development Departments?

MR. K. C. MAMMEN MAPPILLAI (*Commerce and Industries, North*): Yes.

MR. J. JOHN NIDIRY (*Changanachery* cum *Minachil*): Does it belong to the province of the Economic Development Board?

MR. K. C. MAMMEN MAPPILLAI (*Commerce and Industries, North*): Surely not; they might suggest something.

MR. K. PARAMESVARAN PILLAI (*Tiruvalla*): I also agree with my learned friend Mr. Mammen Mappillai in thinking that the department ought to pay more attention to the development of cottage industries than to factory industries, because the factory industries require initiation, organisation and a great deal of capital which it may not be easy to find in a small State like Travancore. But the need for cottage industries is very much felt in the State—occupations in which it is possible to find full time employment for all the labouring classes in the country. In answer to one of the interpellations, I think, made in this session of the Council by one of the members, the Government denied that there are famine months in Travancore. Evidently what the interpellator meant was that there are months in the year in which the labourers in the country are not able to find work, for instance, during the monsoon months. From Mithunam to Chingam, the

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Pulayas and other labourers in middle Travancore, especially those who work in the *punja* fields find absolutely no work, and most of them have to starve during six months. It must be the duty and the function of the Industries Department to find out what industries might be introduced for the purpose of occupying the time of these labourers during the months in which it is not possible for them to get any work. Of course, there are other kinds of labourers who, though they are employed during the greater part of the year, are not able to find work for their energies. So I agree with my friend Mr. Mammen Mappillai that much more attention ought to be bestowed upon this aspect of the question than on the development of the so-called factory industries.

MR. I. C. CHACKO (*Director of Industries*): Mr. Madhava Variar said that the department ought to try to propagate the use of spinning wheels or to do propaganda work on spinning wheels. The spinning wheel which I have in my mind, suggested to me by this speech, is a very simple machine. I do not think that it requires any propaganda work on the part of the Department of Industries. Anybody can easily pick up the practice required for turning out yarn with the *charka*.

MR. M. R. MADHAVA VARIAR (*Chengannur* cum *Pattanamtitta*): But it is now taught in other places for six or seven months.

MR. I. C. CHACKO (*Director of Industries*): You mean spinning with *charka*?

MR. M. R. MADHAVA VARIAR (*Chengannur* cum *Pattanamtitta*): Yes.

MR. I. C. CHACKO (*Director of Industries*): I am not aware of it. May I know whether it is done by the Departments of Industries in other places?

MR. M. R. MADHAVA VARIAR (*Chengannur* cum *Pattanamtitta*): Not by the Department of Industries, but the spinners are taught in several places for carding cotton, etc., for about seven months.

MR. I. C. CHACKO (*Director of Industries*): Well, I am not aware of it. I do not think there is anything which requires the endeavours of the department.

MR. M. R. MADHAVA VARIAR (*Chengannur* cum *Pattanamtitta*): Are you prepared to say that, if the department can do anything for that purpose, you will investigate the possibilities of any help being rendered?

MR. I. C. CHACKO (*Director of Industries*): I have investigated the possibility. There is nothing to be done. Anybody can make a *charka* and begin spinning.

MR. M. R. MADHAVA VARIAR (*Chengannur* cum *Pattanamtitta*): And you have not tried it?

MR. I. C. CHACKO (*Director of Industries*): But I have investigated it.

MR. M. R. MADHAVA VARIAR (*Chengannur* cum *Pattanamtitta*): Have you read any work on the subject?

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[Mr. I. C. Chacko.]

MR. I. C. CHACKO (*Director of Industries*): On spinning? Yes, I do not say I am—

MR. M. R. MADHAVA VARIAR (*Chengannur* cum *Pattanamtitta*): There is nothing to study! (*Laughter.*)

MR. I. C. CHACKO (*Director of Industries*): Mr. Madhava Variar then wanted the Government to start industries. The one requisite for starting industries, as the Council may be aware, is money; and then, as the Council has seen, we are dealing with a budget which is only just balancing, and I do not perceive how we can start industries on a large scale.

MR. T. K. VELU PILLAI (*Trivandrum* cum *Nedumangad*): I wish to ask whether it is the function of the Director of Industries to think of the question of finance at the initial stage when useful suggestions are to be made.

MR. I. C. CHACKO (*Director of Industries*): I must cut my coat according to my cloth. I have to consider the question of finance also before I make recommendations to Government. Well, anyhow these large-scale industries, or some of them at any rate, are too risky for the Government to undertake. The Council may be aware of the Bhadravati Iron Scheme and to what a difficult situation it has now come. And in this scheme more than Rs. 2 crores have been invested. Are we in Travancore able to invest such a large capital in a big industry?

MR. M. R. MADHAVA VARIAR (*Chengannur* cum *Pattanamtitta*): Are there any industries that could be successfully carried on in Travancore without risk?

MR. I. C. CHACKO (*Director of Industries*): There are very many industries; and then again, as it is rather a big question whether it is the business of Government or of the people to start these big industries. So, as Mr. Velu Pillai said, I consider it is not my function to enter into those big questions of politics and economics.

MR. P. K. NARAYANA PILLAI (*Ambalapuzha*): Is your function confined entirely to experiments?

MR. I. C. CHACKO (*Director of Industries*): Not entirely. Mr. Mammen Mappillai suggested that the Departments of Agriculture, Industries and Co-operative Societies should co-operate to develop the cottage industries of the State. We are doing so as far as we can; and Mr. K. Parameswaran Pillai also recommended the development of cottage industries. One of the most important of the cottage industries is weaving, to encourage which we are doing a great deal as I have already told the House. There are other industries, for example, basket-making; the poor Parayas and Pulayas are doing that, especially near about Alwaye, and I made an investigation of the thing.

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MR. T. K. VELU PILLAI (*Trivandrum* cum *Nedumangad*): May I ask if it is true that his Chemical Assistant has discovered a means of making jars from gneiss and granite ?

PRESIDENT: He said that the department has evolved a process of making valuable stoneware.

MR. T. K. VELU PILLAI (*Trivandrum* cum *Nedumangad*): My further question is whether it is not possible to have it on a large scale and have it manufactured by the State.

PRESIDENT: He has already said that the industry has been demonstrated to a sufficient extent to enable private people to start a factory.

MR. T. K. VELU PILLAI (*Trivandrum* cum *Nedumangad*): What is the objection of Government to try the manufacture of jars on a commercial scale ?

PRESIDENT: Mr. Velu Pillai asks what objection Government have to start a large factory for the manufacture of jars.

MR. I. C. CHACKO (*Director of Industries*): I think it is better done by private agencies. We can give all the help they require.

MR. T. K. VELU PILLAI (*Trivandrum* cum *Nedumangad*): My question is not answered. It is not a question of the thing being better done by private agencies—

PRESIDENT: It is answered. Government cannot from economic considerations undertake to start these factories. So it was that he said that it is better done by private agencies.

MR. I. C. CHACKO (*Director of Industries*): Basket-making industry used to be carried on all over Travancore. Now it is carried on to some extent near Alwaye. These basket-makers are very much handicapped. They do not know how to dispose of the articles. A few people who purchase these things do not treat them very fairly. I made a report on this matter to the Registrar of Co-operative Societies. He is now taking steps to organise this industry on a co-operative basis.

MR. M. R. MADHAVA VARIAR (*Chengannur* cum *Pattanamtitta*): What is the encouragement given to the cottage industry in the State by the Industries Department ?

PRESIDENT: He has already mentioned that. Weaving is encouraged.

MR. M. R. MADHAVA VARIAR (*Chengannur* cum *Pattanamtitta*): Any other cottage industries ?

MR. I. C. CHACKO (*Director of Industries*): There is the basket-making industry which I have been just mentioning.

MR. M. R. MADHAVA VARIAR (*Chengannur* cum *Pattanamtitta*): What is the encouragement given by the Industries Department to that industry ?

MR. I. C. CHACKO (*Director of Industries*): We have arranged for the basket manufactured by the basket-makers being collected by the co-operative societies.

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[Mr. I. C. Chacko.

MR. M. R. MADHAVA VARIAR (*Chengannur cum Pattanamtitta*): Is it done by the Department of Industries?

MR. I. C. CHACKO (*Director of Industries*): No, it is not done by the Department of Industries. As I said, I have asked the Registrar of Co-operative Societies to organise one or two co-operative societies to look after this industry. Then there is the screw-pine (കൈത) industry. We have one or two schools which teach this industry. For example, at Chettikulangara there is a school. I was told that high-caste women once considered it below their dignity to make screw-pine mats; but now—

MR. K. PARAMESVARAN PILLAI (*Tiruvalla*): Does he not know that it has been in existence there for generations?

MR. I. C. CHACKO (*Director of Industries*): I am aware of that. The department is trying to spread it.

MR. P. K. NARAYANA PILLAI (*Ambalapuzha*): How?

MR. I. C. CHACKO (*Director of Industries*): I am just trying to explain it. After the introduction of the screw-pine industry at Chettikulangara, even high-caste women are weaving mats, etc. Formerly it was confined to particular castes of people. Now I understand that even Nair ladies during their leisure time are employing themselves in making these mats.

I may also say that any other industry which is a cottage industry in the State, when it is brought to the notice of the department, will, of course, be encouraged.

MR. N. PADMANABHA PILLAI (*Karunagapalli*): Has anything been done by the department to introduce or encourage some industry among the poor fishermen living on the sea-coast?

MR. I. C. CHACKO (*Director of Industries*): Weaving can be introduced among them.

RAO BAHADUR K. A. KRISHNA AIYANGAR (*Nominated*), (*Deputy President*): Do you supply them with looms on the hire-purchase system and recover the cost later on? It may not be possible for several members of these poor communities to pay the cost in the first instance.

PRESIDENT: That is provided for by the Industrial Loans Rules.

MR. K. PARAMESVARAN PILLAI (*Tiruvalla*): I wish to know whether his attention has been drawn to the condition of the Pulayas and Parayas of the Ambalapuzha taluk and what the department has done.

MR. I. C. CHACKO (*Director of Industries*): Yes, my attention has been drawn to their condition. I have been thinking of providing them with suitable work during the rainy seasons. Most of them, I know, are now starving. I know that in my boyhood these people had

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been making baskets. But now-a-days they find it difficult to get the necessary articles for the purpose.

PRESIDENT: Mr. K. Parameswaran Pillai wanted to know what you have done for them. You must answer that question.

MR. I. C. CHACKO (*Director of Industries*): I have written to the Conservator of Forests to know whether reeds and other things could be supplied to these people. This was a point discussed by the Development Board.

MR. N. PADMANABHA PILLAI (*Karunagapalli*): I move for a closure.

PRESIDENT: Is the House for a closure? I take it that the motion is carried.

MR. M. R. MADHAVA VARIAR (*Chengannur* cum *Pattanamtitta*): The object of my motion is to discuss the general policy with regard to the Industries Department; and, in the course of the discussion, two points were clearly brought out, that is, the function of the department is to develop cottage industries and to try as far as possible to promote factory industries also. But I was able to gather from Mr. Chacko's explanation that the department is not doing much for the encouragement of cottage industries. The only industry which is encouraged by the department is the weaving industry and this weaving industry in Travancore does not require any support from the Government. I think most of the weavers in South Travancore will be able to teach the experts in the department in the matter of weaving, and it is not a waning industry in the country. It is not an industry which has to be protected. In reply to my question about spinning, Mr. Chacko's answer was that this industry is a simple thing and that there is nothing to be done by the department, and that no expert need be appointed and so forth. What the department has to do in regard to cottage industries is to organise them and render as much help as possible to promote them. The department, even from its very inception, has been doing nothing appreciable to promote cottage industries, though much is said about cottage industry in the Administration Report and other reports prepared by the department. The department is doing only certain experimental work and supervising certain schools which were managed by the Education Department two or three years ago. That is the chief work of the Industries Department and the results of the experiments are not utilised by the State. I say that the policy adopted by the department is not in the right direction. People do not appreciate the work done by the department at least in regard to the development of cottage industries. There has been no industrial survey of the State. There is no programme for the industrial regeneration of the State. If Government are not prepared to start any industry themselves, mere demonstration will not help the people. They must start industries and show to the people what industries will be successful. These things are not done by the Industries Department. The working of the department hitherto is quite unsatisfactory.

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[President.]

MR. I. C. CHACKO (*Director of Industries*) : Mr. Madhava Variar has again emphasised the need for encouraging cottage industries. As I have said, the object of the department is to encourage all possible industries as far as possible. But these things cannot be done in a day. The development of these industries will take time. Mr. Variar then said that the department was not doing anything for the encouragement of weaving and that weavers are capable of teaching the department. I do not propose to claim credit for the Department of Industries. But I may claim credit for the Government, in saying that it was through the endeavours of the Government that the fly-shuttle loom became common in Travancore.

MR. M. R. MADHAVA VARIAR (*Chengannur* cum *Pattanamtitta*): What about the Salvation Army people who were conducting a weaving institution ?

MR. I. C. CHACKO (*Director of Industries*) : I think that, even before them, the Government were doing it at the Nagercoil institute. The Salvation Army has not been doing much in Travancore. It is through the endeavours of Government and the department that the fly-shuttle loom has become so common in Travancore. It is a great improvement upon the old system of weaving, the production being three or four times as much.

MR. P. K. NARAYANA PILLAI (*Ambalapuzha*) : Has it anything to do with the Industries Department ?

MR. I. C. CHACKO (*Director of Industries*): That is why I have said I do not claim any credit ; it was started before the Department of Industries was created. The Department of Industries is now trying to spread the use of fly-shuttle looms. We are supplying loom accessories, and we are trying to demonstrate the use of fly-shuttle for high counts. They now use fly-shuttles for counts up to 60. Even that, only very dexterous weavers could do.

MR. K. C. MAMMEN MAPPILLAI (*Commerce and Industries, North*): Up to how many counts ?

MR. N. RAMAKRISHNA PILLAI (*Vaikam* cum *Ettumanur*): May I know whether any improvement has been effected in the existing industries through the efforts of the Industries Department?

PRESIDENT: Yes, in regard to weaving.

MR. P. K. NARYANA PILLAI (*Ambalapuzha*): That is done by Government.

MR. N. RAMAKRISHNA PILLAI (*Vaikam* cum *Ettumanur*) : Any other industry ?

MR. I C. CHACKO (*Director of Industries*) : Stonewares are manufactured and demonstrated.

MR. P. K. NARAYANA PILLAI (*Ambalapuzha*): Jars ?

PRESIDENT : Yes, jars are included in stoneware.

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MR. N. RAMAKRISHNA PILLAI (*Vaikam* cum *Ettumanur*): Has any improvement been effected in the coir industry?

MR. I. C. CHACKO (*Director of Industries*): The department has had no chance to effect any improvement in the industry. There is requisition from coir manufacturers for methods of dyeing coir yarn. They want the coir yarn to be dyed with particular dyes and I have asked my Textile Expert, who is also an expert in dyeing, to go to Alleppey and demonstrate the methods of dyeing. Those who want to study the process may go there and take lessons.

MR. M. R. MADHAVA VARIAR (*Chengannur* cum *Pattanamtitta*): Has the Textile Expert prepared any indigenous dyes?

MR. I. C. CHACKO (*Director of Industries*): No. I am told there are no indigenous dyes which can compete with synthetic dyes. But no experiment has been made.

MR. P. K. NARAYANA PILLAI (*Ambalapuzha*): May I know whether the attention of the Director of Industries has been drawn to what Sir P. C. Ray has said with respect to indigenous dyes?

MR. I. C. CHACKO (*Director of Industries*): I have not read that; but I know that in Travancore there are not any dyes that can compete with them.

MR. M. R. MADHAVA VARIAR (*Chengannur* cum *Pattanamtitta*): Was any experiment made with regard to them?

MR. I. C. CHACKO (*Director of Industries*): Some experiments were made before I became the Director. At my instance, a friend of mine has taken up the study of orchilla weed from which an excellent red dye can be manufactured. In fact, that is the best of our dyes. It was used to be employed in former years before synthetic dyes were discovered and it used to be employed for dyeing silk.

MR. M. R. MADHAVA VARIAR (*Chengannur* cum *Pattanamtitta*): What is its name in Malayalam?

MR. I. C. CHACKO (*Director of Industries*): I do not know its Malayalam name. It is a weed growing on palmyra and other trees.

MR. P. K. NARAYANA PILLAI (*Ambalapuzha*): Turmeric is put forward by Sir P. C. Ray as one of the valuable dyes.

MR. I. C. CHACKO (*Director of Industries*): With due deference to Sir P. C. Ray, who is a personal friend of mine, I must say that it is a very fugitive dye. If you expose it to the sun, in the course of a day or two, it will disappear.

MR. M. R. MADHAVA VARIAR (*Chengannur* cum *Pattanamtitta*): I beg to withdraw the motion.

The motion was by leave withdrawn.

PRESIDENT: Gentlemen, all the motions under this Demand having been discussed, I now place before the House for its vote the Demand under Industries, Demand XIV, for a grant of Rs. 1·35 lakhs. I take it that the House sanctions the Demand.

The grant was made.

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